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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/529,675	04/28/2005	Georg Bogner	502901-198PUS	8410
27799 7590 09/21/2007 COHEN, PONTANI, LIEBERMAN & PAVANE 551 FIFTH AVENUE SUITE 1210 NEW YORK, NY 10176			EXAMINER NEGRON, ISMAEL	
			ART UNIT 2885	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/529,675

Applicant(s)

BOGNER ET AL.

Examiner

Ismael Negron

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 June 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 22-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 22-37 and 41-45 is/are rejected.
- 7) ☒ Claim(s) 38-40 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Applicant's amendment filed on June 15, 2007 has been entered. Claims 22, 23 and 44 have been amended. No claim has been cancelled. Claim 45 has been added. Claims 22-45 are still pending in this application, with claim 22 being independent.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 22-24, 26-31, 33-36 and 45 rejected under 35 U.S.C. 102(e) as being anticipated by KAMADA et al. (U.S. Pat. App. Pub. 2002/0006040).
3. KAMADA et al. discloses an illumination device having:
 - **a thermally conductive carrier (as recited in claims 22 and 45),**
Figure 6, reference number 10;
 - **the thermally conductive carrier having a flat mounting surface**
(as recited in claims 22 and 45), as seen in Figures 2, 6 and 31;

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- **a plurality of luminous spots (as recited in claims 22 and 45),**
Figure 6, reference number 1;
- **the luminous spots being arranged on the flat mounting**
surface in a grid format (as recited in claims 22 and 45), as
seen in Figures 2, 6 and 31;
- **each of the luminous spots having a plurality of light emitting**
diodes (as recited in claims 22 and 45), Figure 6, reference
numbers 1a-1d;
- **each of the luminous spots having a submount (as recited in**
claims 22 and 45), Figure 6, reference number 11;
- **each of the plurality of light emitting diodes of a respective**
one of the luminous spots being electrically insulated from the
others of the light emitting diodes of the respective one of the
luminous spots (as recited in Claim 22), inherent, as required by
the independent control required to achieve multiple colors as
disclosed in paragraph 0052;
- **the submounts exhibiting good thermal conductivity (as**
recited in claims 22 and 45), as evidenced in paragraph 0123,
lines 1-6;
- **the submounts being connected to the flat mounting surface**
such that the connections between the submounts and the

- carrier exhibit good thermal conductivity (as recited in claims 22 and 45), as evidenced in paragraph 0123, lines 1-6;**
- **the area of said submounts being less than the entire area covered by the grid on the carrier (as recited in Claim 23), as seen in Figure 6;**
 - **lines for supplying power to the light emitting diodes arranged between the submounts on an insulating carrier on that area of the carrier not occupied by submounts (as recited in Claim 23), Figure 1, reference number 12;**
 - **the lines for supplying power being routed in a flexible film that is continued as a flat lead outside the carrier (as recited in Claim 24), paragraph 142;**
 - **the submounts being made of silicon (as recited in Claim 25);**
 - **the carrier being made of aluminum (as recited in Claim 26), paragraph 0082, line 4;**
 - **the carrier being made of copper (as recited in Claim 27), paragraph 0048, line 4;**
 - **a heat sink connected to the carrier (as recited in Claim 28), Figure 25, reference number 16;**
 - **the insulating carrier including spaces between the submounts filled with plastic (as recited in Claim 29), Figure 2, reference number 13;**

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- **the plurality of light emitting diodes of a respective luminous spot emitting varicolored light (as recited in Claim 30), paragraph 0070, lines 1-6;**
- **the plurality of luminous spots having four light emitting diodes (as recited in Claim 31), Figure 6, reference numbers 1a-1d;**
- **a plurality of reflectors (as recited in Claim 33), Figure 6, reference number 11;**
- **each of the luminous spots being surrounded by one of the reflectors (as recited in Claim 33), as seen in Figure 6;**
- **each reflector forming a depression filled with a transparent plastic (as recited in Claim 34), paragraph 0051, lines 10 and 11;**
- **a respective one of the plurality of light emitting diodes of one luminous spot being connected in series with a respective light emitting diode of another one of the plurality of luminous spots and forming an electric circuit (as recited in Claim 35), paragraph 0146;**
- **the ones of the luminous spots having the light emitting diodes associated with the electric circuit being interleaved with luminous spots associated with at least one other electric circuit (as recited in Claim 36), paragraph 0146.**

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 25, 32 and 37-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over KAMADA et al. (U.S. Pat. App. Pub. 2002/0006040).
5. KAMADA et al. discloses an illumination device including many of the claimed limitations as detailed in previous section 3, further including:
 - **each of the identically colored light emitting diodes being connected to different electric circuits (as recited in claims 37 and 44), paragraph 0146;**
 - **control devices arranged and dimensioned for providing currents fed to each of the electric circuits (as recited in Claim 38), as seen in Figure 36.**
6. KAMADA et al. discloses all the limitations of the claims, except:
 - the submounts being made of silicon (as recited in Claim 25);
 - each of said plurality of luminous spots has two green-luminous light emitting diodes, one blue-luminous light emitting diode and one red-luminous light emitting diode (as recited in Claim 32);

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- each luminous spot including a plurality of identically colored light emitting diodes (as recited in claims 37 and 44);
- the control devices, in the event of interruption of one of the electric circuits for the identically colored light emitting diodes which causes a color shift in the color produced by said luminous spot, controlling the currents in the electric circuits for the at least one other electric circuit for the identically colored light emitting diodes or for differently colored light emitting diodes of the same luminous spots to compensate for the color shift produced by the interruption (as recited in Claim 38);
- the control of the current including an increase in the current in the at least one other electric circuit for identically colored light emitting diodes (as recited in Claim 39);
- the control of the current including a decrease in the current in the at least one other electric circuit for differently colored light emitting diodes (as recited in Claim 40);
- the plurality of luminous spots forming a grid of 4x8 luminous spots (as recited in Claim 41);
- each of the plurality of luminous spots having two green-luminous light emitting diodes and two red-luminous light emitting diodes (as recited in Claim 41);

- four electric circuits being provided for the red-luminous light emitting diodes, two of said four electric circuits being assigned to said red-luminous light emitting diodes of identical luminous spots, said identical spots being distributed over the grid in checkered fashion (as recited in Claim 41);
- each of the green-luminous light emitting diodes being connected to eight electric circuits, in each case one green-luminous light emitting diode of eight luminous spots being connected to one electric circuit and a further green-luminous light emitting diode of the same luminous spot being connected to another electric circuit (as recited in Claim 42);
- the carrier being composed of ultra pure aluminum (as recited in Claim 43).

7. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use silicon as the material of the submount (as recited in Claim 25) or ultra pure aluminum as the material of the carrier (as recited in Claim 43) of the patented illumination device of KAMADA et al., since it has been held by the courts that selection of a prior art material on the basis of its suitability for its intended purpose is within the level of ordinary skill. *In re Leshing*, 125 USPQ 416 (CCPA 1960) and *Sinclair & Carroll Co. v. Interchemical Corp.*, 65 USPQ 297 (1945). In this case, using the claimed material specifically would have flown naturally to one of ordinary skill in the

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art as necessitated by the requirements of a particular application, as evidenced by KAMADA et al., for example, in paragraphs 0047, 0048, 0082 and 0086.

8. Regarding each luminous spot having two green, one blue and one red light emitting diode (as recited in Claim 32); a plurality of identically colored light emitting diodes (as recited in Claim 37); or two green and two red light emitting diodes (as recited in Claim 42), it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the claimed specific combination of colors, as required by a desired color output range, as evidenced by KAMADA et al. in paragraphs 0005, 0052 and 0154.

9. Regarding the specific circuit and control arrangement recited in claims 38-42, it would have flown naturally to one of ordinary skill in the art to arrange the LED circuit of KAMADA et al. as necessitated by the requirements of a particular application, as evidenced by KAMADA et al. in, for example, paragraphs 135 and 146.

In addition, the applicant is respectfully advised that, while features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. *In re Schreiber*, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997).

10. Regarding the plurality of luminous spots form a grid of 4x8 luminous spots (as recited in Claim 42), the applicant is respectfully advised that in considering the disclosure of a reference, it is proper to take into account not only specific teachings of the reference but also the inferences which one skilled in the art would reasonably be

expected to draw therefrom." *In re Preda*, 159 USPQ 342 (CCPA 1968). In this case, it would have been obvious to one of ordinary skill in the art to form the illumination device of KAMADA et al. in a 4x8 configuration instead of that disclosed in Figure 6 (4 rows of unspecified length), since the one of ordinary skill would have recognized such arrangement as being merely an example, with selection of a specific configuration over another being an obvious matter of meeting the specific requirements (e.g. desired size of the device) of a given application. In addition, the Examiner takes Official Notice of the instant specification failing to disclose that a 4x8 configuration solves any problem or is for a particular reason.

Allowable Subject Matter

11. Claims 38-40 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. The following is a statement of reasons for the indication of allowable subject matter:

Applicant teaches an illumination device for backlighting a light valve device, the illumination device including a plurality of luminous spots arranged in a grid format on a thermally conductive carrier, each luminous spot including a submount and a plurality of LED on a flat surface of the carrier. Each of the luminous spots is electrically insulated for the other luminous spots. The submount exhibiting good thermal conductivity and

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being connected to the flat surface of the carrier such that the connections between the submounts and the carrier exhibit good thermal conductivity. The LED of one luminous spot is connected in series with a respective LED of another one of the luminous spots. Each luminous spot including a plurality of identically colored LED connected to different electric circuits. The illumination device further includes current control means for compensating for the color shift generated by one circuit being interrupted.

No prior art was found teaching individually, or suggesting in combination, all of the features of the applicants' invention, specifically color shift compensating control means in combination with the recited structural limitations of the claimed illumination device.

Response to Arguments

13. Applicant's arguments filed June 15, 2007 have been fully considered but they are not persuasive.

14. Regarding the Examiner's rejection of Claim 22 under 35 U.S.C. 102(e) as being anticipated by KAMADA et al. (U.S. Pat. App. Pub. 2002/0006040), the applicant argues that the cited reference fails to disclose all the features of the claimed invention, specifically a thermally conductive carrier or the luminous spots being arranged on a flat mounting surface of such carrier.

15. In response to applicant's arguments that KAMADA et al. failed to disclose a thermally conductive carrier, the applicant is advised that in considering the disclosure of a reference, it is proper to take into account not only specific teachings of the reference but also the inferences which one skilled in the art would reasonably be expected to draw therefrom. *In re Preda*, 159 USPQ 342 (CCPA 1968). In this case, KAMADA et al. teaches a substrate 10 including circuit parts 12 for electrically connecting to a plurality of light emitting diode (LED) chips 1a-1d. One skilled in the art would have easily recognized the circuit parts 12 of the substrate 10 as heat conducting, as such circuit part as customarily used, not only to provide power to the LED chips, but also to remove heat away from such chips.

16. In response to applicant's arguments that KAMADA et al. failed to disclose the luminous spots being arranged on a flat mounting surface of the carrier, the applicant is respectfully directed to Figure 31, where the luminous spot 1 is clearly shown arranged on a flat surface of the carrier 10.

17. Regarding the Examiner's rejection of claims 26 and 27 under 35 U.S.C. 102(e) as being anticipated by KAMADA et al. (U.S. Pat. App. Pub. 2002/0006040), the applicant argues that the cited reference fails to disclose all the features of the claimed invention, specifically the carrier being made of aluminum or copper, respectively.

18. In response to applicant's arguments that KAMADA et al. failed to disclose the carrier being made of aluminum or copper, the applicant is respectfully advised that while the claims of issued patents are interpreted in light of the specification, prosecution history, prior art and other claims, this is not the mode of claim interpretation to be applied during examination. During examination, the claims must be interpreted as broadly as their terms reasonably allow. *In re American Academy of Science Tech Center*, 70 USPQ2d 1827 (Fed. Cir. May 13, 2004). In this case, KAMADA et al. disclose a substrate 10 including a metal layer or film of the claimed materials, therefore was considered to broadly meet the claimed limitations. In addition, it is noted that copper and aluminum are used extensively in LED illumination devices, as the high heat conductivity of such metals is desired for cooling the LED matrix.

19. Regarding the Examiner's rejection of Claim 36 under 35 U.S.C. 102(e) as being anticipated by KAMADA et al. (U.S. Pat. App. Pub. 2002/0006040), the applicant argues that the cited reference fails to disclose all the features of the claimed invention, specifically at least one luminous spot being interleaved with a luminous spot of a different circuit.

20. In response to applicant's arguments that KAMADA et al. failed to disclose at least one luminous spot being interleaved with a luminous spot of a different circuit, the applicant is respectfully advised that while the claims of issued patents are interpreted in light of the specification, prosecution history, prior art and other claims, this is not the

mode of claim interpretation to be applied during examination. During examination, the claims must be interpreted as broadly as their terms reasonably allow. *In re American Academy of Science Tech Center*, 70 USPQ2d 1827 (Fed. Cir. May 13, 2004). In this case, KAMADA et al. disclose luminous spots 1 arranged in a grid-like format on a substrate 10 configured for independently controlling each luminous spot 1. Since each luminous spot 1 is in a different circuit than the other luminous spots 1 (i.e. independently controlled) and disposed in a grid-like format, such luminous spots 1 were considered to broadly anticipate the claimed limitations.

21. Regarding the Examiner's rejection of claims 23-25, 28-35, 37 and 41-44, the applicant present no arguments, except stating that such claims depend directly or indirectly from independent claim 22 and would be allowable when/if the independent claim is allowed.

Conclusion

22. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

23. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ismael Negrón whose telephone number is (571) 272-2376. The examiner can normally be reached on Monday-Friday from 9:00 A.M. to 6:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jong-Suk (James) Lee, can be reached on (571) 272-7044. The facsimile machine number for the Art Group is (571) 273-8300.

25. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, go to <http://pair-direct.uspto.gov>. Should you have questions on access to Private PAIR system, contact the Electronic Business Center (EBC) toll-free at 866-217-9197.

/Ismael Negrón/
Examiner
AU 2885


JONG-SUK (JAMES) LEE
SUPERVISORY PATENT EXAMINER